

## ABSTRACT

In a transmission power amplifying unit used for radio communications, a non-linear distortion compensator is provided before its main power amplifier. The compensator compensates the main power amplifier for non-linear distortions so as to perform non-linear distortion compensation prior to power amplification of a transmission signal. The transmission signal that has undergone the non-linear distortion compensation is amplified by the main power amplifier. The phase of either the output of the amplifier or the transmission signal is controlled and these two signals are synthesized so that they are in opposite phase. This operation can reduce non-linear distortion components generated in the main power amplifier and thus power consumption of the amplifier. As a result, power consumption of the auxiliary amplifier is reduced and efficiency of power used in the linear compensated amplifying equipment can be improved.